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## SEQUENCE LISTING

<110> STEWARD, LANCE E  
FERNANDEZ-SALAS, ESTER  
HERRINGTON, TODD M  
AOKI, KEI R

<120> Leucine-based motif and clostridial neurotoxins

<130> D-2885CIP

<150> US 09/620,840

<151> 2000-07-21

<160> 20

<170> PatentIn version 3.1

<210> 1

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having properties substantially similar to that of leucine based sequence  
x may be any amino acid or derivatives thereof

<400> 1

Xaa Asp Xaa Xaa Xaa Leu Leu

1 5

<210> 2

<211> 7

<212> PRT

<213> Artificial

<220>

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<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having properties substantially similar to leucine based motif  
x may be any amino acid or derivatives thereof

<400> 2

Xaa Glu Xaa Xaa Xaa Leu Leu

1 5

<210> 3

<211> 7

<212> PRT

<213> Artificial

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<223> Description of Artificial Sequence: fragment having properties substantially similar to that of leucine based motif

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<222> (1)..(5)

<223> X may be any amino acid or derivatives thereof

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Xaa Asp Xaa Xaa Xaa Leu Ile

1 5

<210> 4

<211> 7

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<213> Artificial

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<223> Description of Artificial Sequence: fragment having properties substantially similar to that of leucine based motif

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<222> (1)..(5)

<223> X may be any amino acid or derivatives thereof

<400> 4

Xaa Asp Xaa Xaa Xaa Leu Met  
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<210> 5

<211> 7

<212> PRT

<213> Artificial

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<223> Description of Artificial Sequence: fragment having properties substantially similar to leucine based motif

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<223> X may be any amino acid or derivatives thereof

<400> 5

Xaa Glu Xaa Xaa Xaa Leu Ile  
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<210> 6

<211> 7  
<212> PRT  
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<221> MISC\_FEATURE  
<222> (1)..(5)  
<223> Description of Unknown Organism: This fragment may have come from  
a rat source.

<220>  
<221> MISC\_FEATURE  
<222> (1)..(5)  
<223> X may be any amino acid or derivatives thereof

<400> 6

Xaa Glu Xaa Xaa Xaa Leu Met  
1 5

<210> 7  
<211> 7  
<212> PRT  
<213> Unknown

<220>  
<223> Description of Unknown Organism: This fragment may have come from  
a rat source.

<400> 7

Phe Glu Phe Tyr Lys Leu Leu  
1 5

<210> 8  
<211> 7  
<212> PRT  
<213> rat

&lt;400&gt; 8

Glu Glu Lys Arg Ala Ile Leu

1 5

&lt;210&gt; 9

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; rat

&lt;400&gt; 9

Glu Glu Lys Met Ala Ile Leu

1 5

&lt;210&gt; 10

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; rat

&lt;400&gt; 10

Ser Glu Arg Asp Val Leu Leu

1 5

&lt;210&gt; 11

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; rat

&lt;400&gt; 11

Val Asp Thr Gln Val Leu Leu

1 5

&lt;210&gt; 12

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; mouse

<400> 12

Ala Glu Val Gln Ala Leu Leu

1 5

<210> 13

<211> 7

<212> PRT

<213> frog

<400> 13

Ser Asp Lys Gln Asn Leu Leu

1 5

<210> 14

<211> 7

<212> PRT

<213> chicken

<400> 14

Ser Asp Arg Gln Asn Leu Ile

1 5

<210> 15

<211> 7

<212> PRT

<213> sheep

<400> 15

Ala Asp Thr Gln Val Leu Met

1 5

<210> 16

<211> 7

<212> PRT

<213> Homo sapiens

<400> 16

Ser Asp Lys Gln Thr Leu Leu

1 5

<210> 17

<211> 7

<212> PRT

<213> Homo sapiens

<400> 17

Ser Gln Ile Lys Arg Leu Leu

1 5

<210> 18

<211> 7

<212> PRT

<213> Homo sapiens

<400> 18

Ala Asp Thr Gln Ala Leu Leu

1 5

<210> 19

<211> 437

<212> PRT

<213> Clostridium botulinum

<400> 19

Pro Phe Val Asn Lys Gln Phe Asn Tyr Lys Asp Pro Val Asn Gly Val

1 5 10 15

Asp Ile Ala Tyr Ile Lys Ile Pro Asn Val Gly Gln Met Gln Pro Val

20 25 30

Lys Ala Phe Lys Ile His Asn Lys Ile Trp Val Ile Pro Glu Arg Asp  
35 40 45

Thr Phe Thr Asn Pro Glu Glu Gly Asp Leu Asn Pro Pro Pro Glu Ala  
50 55 60

Lys Gln Val Pro Val Ser Tyr Tyr Asp Ser Thr Tyr Leu Ser Thr Asp  
65 70 75 80

Asn Glu Lys Asp Asn Tyr Leu Lys Gly Val Thr Lys Leu Phe Glu Arg  
85 90 95

Ile Tyr Ser Thr Asp Leu Gly Arg Met Leu Leu Thr Ser Ile Val Arg  
100 105 110

Gly Ile Pro Phe Trp Gly Gly Ser Thr Ile Asp Thr Glu Leu Lys Val  
115 120 125

Ile Asp Thr Asn Cys Ile Asn Val Ile Gln Pro Asp Gly Ser Tyr Arg  
130 135 140

Ser Glu Glu Leu Asn Leu Val Ile Ile Gly Pro Ser Ala Asp Ile Ile  
145 150 155 160

Gln Phe Glu Cys Lys Ser Phe Gly His Glu Val Leu Asn Leu Thr Arg  
165 170 175

Asn Gly Tyr Gly Ser Thr Gln Tyr Ile Arg Phe Ser Pro Asp Phe Thr  
180 185 190

Phe Gly Phe Glu Glu Ser Leu Glu Val Asp Thr Asn Pro Leu Leu Gly

195

200

205

Ala Gly Lys Phe Ala Thr Asp Pro Ala Val Thr Leu Ala His Glu Leu  
 210 215 220

Ile His Ala Gly His Arg Leu Tyr Gly Ile Ala Ile Asn Pro Asn Arg  
 225 230 235 240

Val Phe Lys Val Asn Thr Asn Ala Tyr Tyr Glu Met Ser Gly Leu Glu  
 245 250 255

Val Ser Phe Glu Glu Leu Arg Thr Phe Gly Gly His Asp Ala Lys Phe  
 260 265 270

Ile Asp Ser Leu Gln Glu Asn Glu Phe Arg Leu Tyr Tyr Tyr Asn Lys  
 275 280 285

Phe Lys Asp Ile Ala Ser Thr Leu Asn Lys Ala Lys Ser Ile Val Gly  
 290 295 300

Thr Thr Ala Ser Leu Gln Tyr Met Lys Asn Val Phe Lys Glu Lys Tyr  
 305 310 315 320

Leu Leu Ser Glu Asp Thr Ser Gly Lys Phe Ser Val Asp Lys Leu Lys  
 325 330 335

Phe Asp Lys Leu Tyr Lys Met Leu Thr Glu Ile Tyr Thr Glu Asp Asn  
 340 345 350

Phe Val Lys Phe Phe Lys Val Leu Asn Arg Lys Thr Tyr Leu Asn Phe  
 355 360 365

Asp Lys Ala Val Phe Lys Ile Asn Ile Val Pro Lys Val Asn Tyr Thr  
 370 375 380

Ile Tyr Asp Gly Phe Asn Leu Arg Asn Thr Asn Leu Ala Ala Asn Phe  
 385 390 395 400

Asn Gly Gln Asn Thr Glu Ile Asn Asn Met Asn Phe Thr Lys Leu Lys  
 405 410 415

Asn Phe Thr Gly Leu Phe Glu Phe Tyr Lys Leu Leu Cys Val Arg Gly  
 420 425 430

Ile Ile Thr Ser Lys  
 435

<210> 20

<211> 441

<212> PRT

<213> Clostridium botulinum

<400> 20

Met Pro Val Thr Ile Asn Asn Phe Asn Tyr Asn Asp Pro Ile Asp Asn  
 1 5 10 15

Asn Asn Ile Ile Met Met Glu Pro Pro Phe Ala Arg Gly Thr Gly Arg  
 20 25 30

Tyr Tyr Lys Ala Phe Lys Ile Thr Asp Arg Ile Trp Ile Ile Pro Glu  
 35 40 45

Arg Tyr Thr Phe Gly Tyr Lys Pro Glu Asp Phe Asn Lys Ser Ser Gly  
 50 55 60

Ile Phe Asn Arg Asp Val Cys Glu Tyr Tyr Asp Pro Asp Tyr Leu Asn  
 65                    70                    75                    80

Thr Asn Asp Lys Lys Asn Ile Phe Leu Gln Thr Met Ile Lys Leu Phe  
                   85                    90                    95

Asn Arg Ile Lys Ser Lys Pro Leu Gly Glu Lys Leu Leu Glu Met Ile  
                   100                    105                    110

Ile Asn Gly Ile Pro Tyr Leu Gly Asp Arg Arg Val Pro Leu Glu Glu  
                   115                    120                    125

Phe Asn Thr Asn Ile Ala Ser Val Thr Val Asn Lys Leu Ile Ser Asn  
                   130                    135                    140

Pro Gly Glu Val Glu Arg Lys Lys Gly Ile Phe Ala Asn Leu Ile Ile  
                   145                    150                    155                    160

Phe Gly Pro Gly Pro Val Leu Asn Glu Asn Glu Thr Ile Asp Ile Gly  
                   165                    170                    175

Ile Gln Asn His Phe Ala Ser Arg Glu Gly Phe Gly Gly Ile Met Gln  
                   180                    185                    190

Met Lys Phe Cys Pro Glu Tyr Val Ser Val Phe Asn Asn Val Gln Glu  
                   195                    200                    205

Asn Lys Gly Ala Ser Ile Phe Asn Arg Arg Gly Tyr Phe Ser Asp Pro  
                   210                    215                    220

Ala Leu Ile Leu Met His Glu Leu Ile His Val Leu His Gly Leu Tyr  
                   225                    230                    235                    240

Gly Ile Lys Val Asp Asp Leu Pro Ile Val Pro Asn Glu Lys Lys Phe  
245 250 255

Phe Met Gln Ser Thr Asp Ala Ile Gln Ala Glu Glu Leu Tyr Thr Phe  
260 265 270

Gly Gly Gln Asp Pro Ser Ile Ile Thr Pro Ser Thr Asp Lys Ser Ile  
275 280 285

Tyr Asp Lys Val Leu Gln Asn Phe Arg Gly Ile Val Asp Arg Leu Asn  
290 295 300

Lys Val Leu Val Cys Ile Ser Asp Pro Asn Ile Asn Ile Asn Ile Tyr  
305 310 315 320

Lys Asn Lys Phe Lys Asp Lys Tyr Lys Phe Val Glu Asp Ser Glu Gly  
325 330 335

Lys Tyr Ser Ile Asp Val Glu Ser Phe Asp Lys Leu Tyr Lys Ser Leu  
340 345 350

Met Phe Gly Phe Thr Glu Thr Asn Ile Ala Glu Asn Tyr Lys Ile Lys  
355 360 365

Thr Arg Ala Ser Tyr Phe Ser Asp Ser Leu Pro Pro Val Lys Ile Lys  
370 375 380

Asn Leu Leu Asp Asn Glu Ile Tyr Thr Ile Glu Glu Gly Phe Asn Ile  
385 390 395 400

Ser Asp Lys Asp Met Glu Lys Glu Tyr Arg Gly Gln Asn Lys Ala Ile  
405 410 415

Asn Lys Gln Ala Tyr Glu Glu Ile Ser Lys Glu His Leu Ala Val Tyr  
420 425 430

Lys Ile Gln Met Cys Lys Ser Val Lys  
435 440